ABSTRACT OF THE DISCLOSURE

A plasma processing apparatus including a plasma processing chamber having a plasma excitation electrode for exciting a plasma, a radiofrequency generator for supplying a radiofrequency voltage to the electrode, a radiofrequency feeder connected to the electrode, and a matching circuit having an input terminal and an output end. The input terminal is connected to the radiofrequency generator and the output end is connected to an end of the radiofrequency feeder so as to achieve impedance matching between the plasma processing chamber and the radiofrequency generator. A frequency which is three times a first series resonant frequency f_0 of the plasma processing chamber, which is measured at the end of the radiofrequency feeder, is larger than a power frequency f_e of the radiofrequency waves.